No. 846,961. PATENTED MAR. 12, 1907.

I. E. STUMP.

AUTOMOBILE HORN.

APPLICATION FILED DEC. 13, 1906.

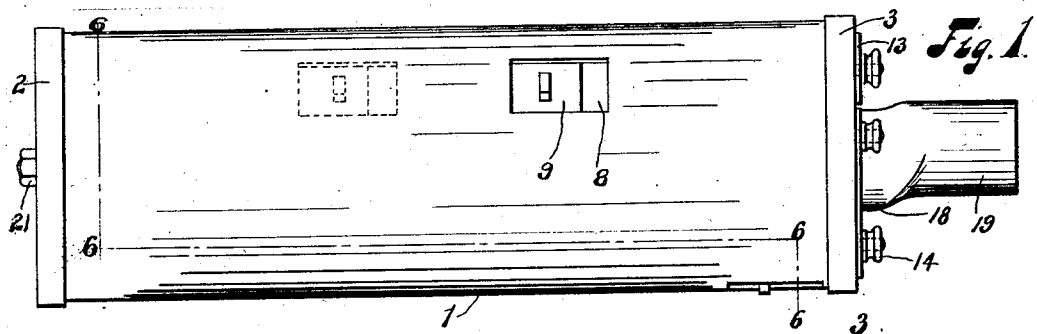


Fig. 1.

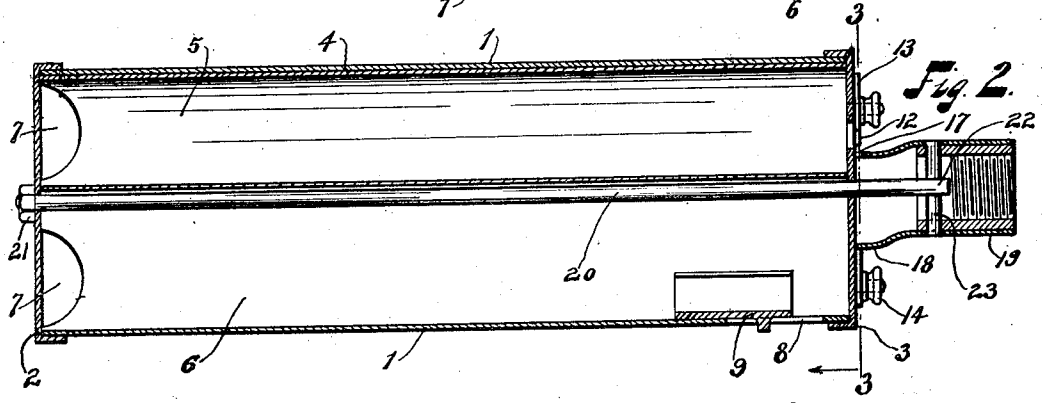


Fig. 2.

Fig. 3.

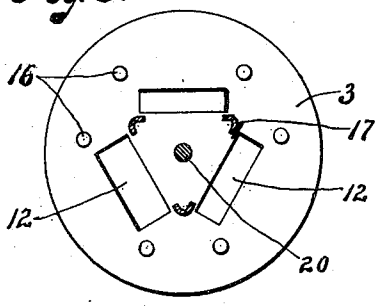


Fig. 4.

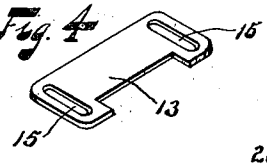


Fig. 5.

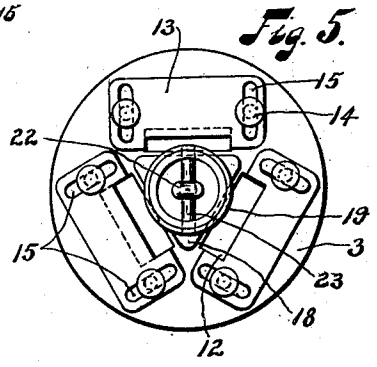
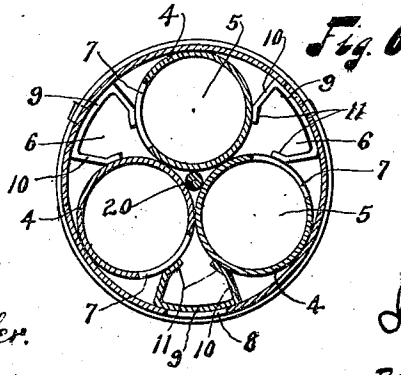


Fig. 6.



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UNITED STATES PATENT OFFICE.

IRA E. STUMP, OF CLEVELAND, OHIO.

AUTOMOBILE-HORN.

No. 846,961. Specification of Letters Patent. Patented March 12, 1907.

Application filed December 13, 1906. Serial No. 347,582.

To all whom it may concern:

Be it known that I, IRA E. STUMP, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Automobile-Horns, of which the following is a specification.

My invention relates to improvements in automobile-horns designed to be blown by the exhaust from the motor passing through a suitable pipe or tubing connected thereto or by air contained in an ordinary air-compression bulb similarly connected thereto.

The invention relates more particularly to what may be termed a "divisional horn," comprising a series of fluid-pressure chambers provided with adjustable valve-openings by means of which their relative pitches may be made such as to produce a chord or "chime" when sounded together.

The paramount object of the invention is to produce a generally-improved horn of this class adapted to produce any desired pitch or quality of tone by manipulation of the various parts comprised in the same and adapted to produce a proper speech, blending, and character of tone.

With these ends in view the invention consists in the novel construction, arrangement, and combination of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims.

Referring to the drawings forming a part of this specification, Figure 1 is a plan view of the improved horn; Fig. 2, a longitudinal sectional view; Fig. 3, an end view taken through line 3 3 of Fig. 1, with the adjustably-mounted lips removed for the purposes of clearer illustration of parts; Fig. 4, a perspective view of one of the adjustably-mounted lips; Fig. 5, a rear end view; Fig. 6, a sectional view taken through line 6 6 of Fig. 1.

Similar characters of reference designate like parts throughout all the figures of the drawings.

The improved horn comprises a cylindrical main body portion 1, carrying on its front and rear ends flanged caps or heads 2 and 3, respectively. The main body portion 1 contains a plurality of longitudinally-extending tubes 4, preferably three in number, as shown in the present embodiment of the invention, and having their ends abutting or impinging against the caps or heads 2 and 3.

The tubes 4 are adapted to form tubular fluid-pressure chambers 5 and should fit snugly against each other and against the adjacent inner walls of the body portion 1 throughout the entire lengths thereof, so as to form fluid-tight longitudinally-extending chambers 6 between the outer peripheries of the tubes and the inner periphery of the main body portion of the horn.

The tubular chambers 5 are brought into communication with the chambers 6 by means of notched openings or recesses 7, formed in the ends thereof adjacent to the front cap or head 2, so that the chambers 6 form a practical continuation of the adjacent tubular chambers 5, thus giving a relatively long length to the several fluid-pressure chambers in a relatively short-horn body.

The several fluid-pressure chambers may be graded as to length and the different pitches in tones arising from the gradation in length regulated to produce a proper or desired blending or chime by means of vent of valve openings 8, formed in the horn-body 1 and communicating with the several chambers 6. The valve-openings 8 are adapted to be increased or decreased in size or opened and closed by means of slide plates or valves 9, provided with depending sides 10, terminating in friction-flanges 11, abutting against the tubes 4 and adapted to support the plates in proper position against the inner periphery of the cylindrical horn-body.

The rear flanged cap or head 3 is provided with inlet openings or slots 12, communicating with the tubular chambers 5, and the size of said slots is adapted to be increased or decreased for varying or regulating the blending and character of tone produced by means of slidably and adjustably mounted lips or tongue-pieces 13, secured to the cap or head 3 by means of thumb-screws 14, passing through slots 15 and taking into threaded openings 16 of the head or cap 3.

The operating fluid is directed over and against the edges of the lips or tongue-pieces 13 from slots or recesses 17, formed by shallow notches or recesses in the abutting or impinging end 18, of triangular shape in cross-section, of the receiving or inlet tube or pipe 19.

The tubes 4, together with the caps or heads 2 and 3 and impinging inlet-tube 19, are securely fastened and held in proper position by means of a central longitudinally-

extending rod or bolt 20, threaded at its front end and provided with a nut 21 and having an eye or cross opening 22, taking over a cross pin or bolt 23, having its ends secured in the walls of the receiving or inlet pipe 19.

From the foregoing description, taken in connection with the accompanying drawings, the operation and advantages of my invention will be readily understood.

Having thus described my invention without having attempted to set forth all the forms in which it may be made or all the modes of its use, I declare that what I claim, and desire to secure by Letters Patent, is—

1. A horn, comprising a cylindrical horn-body inclosing a plurality of longitudinally-extending impinging notched tubes forming communicating fluid-pressure chambers.

2. A horn, comprising a cylindrical main body portion provided with caps or heads and inclosing a plurality of longitudinally-extending tubes provided at one end with notched openings adjacent to one of said heads and at the other with adjustable inlet-slot openings formed in the opposite head.

3. A horn, comprising a cylindrical main body portion provided with flanged caps or heads and inclosing a plurality of longitudinally-extending impinging tubes having the ends thereof abutting against said caps or heads and notched openings forming communicating fluid-pressure chambers.

4. A horn comprising a cylindrical main body portion, front and rear flanged heads mounted on the ends thereof, a plurality of tubes mounted therein and having the ends thereof abutting against said heads, an inlet-pipe provided with recesses, adjacent to said rear head, a bolt secured at one end to said front head and at the other to said inlet-pipe, and openings formed in said rear head and communicating with said tubes.

5. A horn comprising a main body portion, heads mounted on the ends thereof, a plurality of tubes mounted therein, a centrally-located bolt-rod passing through said heads and between said tubes, an inlet-pipe secured to one end of said bolt-rod and adjustable slot-openings leading into the ends of said tubes.

6. A horn, comprising a cylindrical main body portion provided with heads, a plurality of fluid-pressure chambers formed therein, by means of impinging tubes abutting against said heads, openings formed in one of said heads and leading to said chambers, and valve-openings formed in said main body portion and communicating with said chambers.

7. A horn, comprising a main body portion provided with heads, longitudinally-extending fluid-pressure chambers formed therein by means of tubes, adjustable slot-openings formed in said heads and leading to said chambers, and adjustable valve-openings formed in said main body portion and leading to said chambers.

8. A horn, comprising a main body portion provided with heads, a plurality of tubes mounted therein and provided with communicating fluid-pressure chambers within and about the walls of said tubes' inlet-slots formed in one of said heads and communicating with said tubes, an inlet-pipe impinging against said head and provided with recesses directing the operating fluid to said inlet-slots, and a longitudinally-extending bolt passing through said heads and secured to said inlet-pipe.

9. A horn, comprising a cylindrical main body portion provided with heads, and a plurality of impinging tubes mounted therein and providing communicating fluid-chambers within and without said tubes respectively.

10. A horn, comprising a cylindrical main body portion inclosing a plurality of fluid-chambers defined by a plurality of notched and impinging longitudinally-extending tubes.

11. In a horn, a horn-body inclosing a plurality of tubes, a head provided with slot-openings leading thereto, adjustable lips mounted over said slot-openings, and an intake-pipe secured to said head and provided with slots directing the operating fluid against said adjustable lips.

12. A horn-body inclosing a plurality of fluid-chambers provided with slot-openings at the sides and adjustable lips at the ends.

13. A horn, comprising a horn-body having longitudinally-extending fluid-chambers provided with adjustable lip and valve openings at the ends and sides thereof, respectively.

14. In a horn, a horn-body divided to form a plurality of longitudinally-extending fluid-chambers provided at their ends with inlet-slot openings and at their sides with outlet-valve openings.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

IRA E. STUMP.

Witnesses:
O. C. BILLMAN,
F. C. WAGNER.